

logy, that science would be greatly enriched; but they would probably be forced to abandon the faith that Nature is essentially simple.

This volume, which is more than twice as long as its 1919 edition, and includes many references to recent publications, bears the title "Meteorological Calculus; Pressure and Wind". Entropy also is frequently considered in its connexion with wind. The subject matter is arranged more or less in the following sequence: (1) A verbal account of the forces concerned. (2) Photographs of typical anemograph traces. (3) The general dynamical and other equations for a compressible fluid covering a rotating earth. (4) A review of the attempts that have been made to use fairly general equations. (5) The geostrophic approximation in which the pressure gradient is regarded as balanced by the Coriolis force due to the earth's rotation. (6) The effect of turbulence on the mean direction and velocity of the wind near the ground. (7) The effect of turbulence on cloud sheets. (8) Observations obtained by watching free balloons through theodolites. (9) The effect of horizontal temperature-gradient on the change of wind with height, including an elegant theory. (10) The graphic analysis of atmospheric motion. (11) A second approximation including not only the earth's rotation but also the curvature of the track on the map. (12) Cyclones and anticyclones, conventional and real, but with attention chiefly to their rotation. (13) The meeting of tropical with polar air and the resulting conversion of heat energy into motion, with the formation of cyclones. (14) Under the motto—

We look before and after
And pine for what is not—

the book ends with a retrospect of the four volumes of which it is the last.

There is in some textbooks a sort of clarity which is attained by mentioning only the simplest types of phenomena, by leaving out all inconvenient qualifications and by looking at the subject steadily from one point of view. The reader will not find that sort of clarity in this book. Instead, phenomena are considered in their actual complexity, qualifications are made prominent and the point of view wanders among the observational, mathematical, historical, administrative, and poetical aspects. Portions of information which seem to have come from one chapter have diffused into other chapters, like cumuli into the blue sky. Sir Napier "bloweth where he listeth", and it would be hard to tell whence he cometh or whither he goeth, were it not that there is a full index and a summary of the contents of the four volumes.

Sir Napier has endowed meteorology with a number of admirably descriptive and euphonious technical terms, including "geostrophic" and "tephigram". The reader should be forewarned of the queer notation "*bb*" for barometric gradient. According to V. Bjerknes an atmosphere is termed 'barotropic' if the density is either constant or *any* function of the pressure only. This term is valuable because barotropic conditions are often assumed in the older mathematical theories but seldom occur in observational data. It is regrettable that on p. 298 'barotropic' is wrongly defined by being restricted to the *special* function $pv^\gamma = \text{constant}$.

This volume is entitled a "calculus", but words predominate. The mathematical inquirer will find in it his observational raw material discussed by authors of wide experience, with the aid of about eighty diagrams. He will also find plenteous warnings against the approximations to which mathematicians are disposed, several important theories fully and clearly set out, and many useful references to mathematical papers old and new. But unsatisfying or mysterious summaries will probably drive him to the original works.

L. F. R.

Homer's Natural History

Die homerische Tierwelt. Von Prof. Dr. Otto Körner. Zweite, für Zoologen und Philologen neubearbeitete und ergänzte Auflage. Pp. iv + 100. (München: J. F. Bergmann, 1930.) 6.60 gold marks.

THERE is no one quite like Homer to those who love him. He is so simple yet so great, so easy to understand and withal so noble, that a shadowy friendship, firm and intimate at last, grows up between us; there are few great poets who can make friends as he can with mortal men. When one does get to know Homer the friendship lasts a lifetime, and one comes to feel what Mr. Pope calls "a certain complacency in his company". Hard by my own door a scholar lives who knew his Homer by heart, every single word of him, a lifetime ago, and who has kept his friendship from youth to age; and in just the same way a certain old physician of Rostock, Prof. Otto Körner, has had Homer for a close and lifelong friend.

Fifty-two years ago, Prof. Otto Körner published, and now he has revised and enlarged, this little book on Homer's natural history; later on he wrote on Homer's and Hesiod's knowledge of the bee; and only a couple of years ago he wrote, fully and learnedly, on Homeric medicine and surgery. These cover and include Homer's

anatomy and physiology, which, as Daremberg has told us, are as admirable as those of the "Corpus Hippocraticum". In this last little book Dr. Körner told us, for example, just how, when Idomeneus had thrust his lance right into the heart of Alcathous, the last heart-beats caused the shaft to quiver: or what that Nepenthes was which Helen put into the wine-cup; or how, in August and September, the Dog-star brought malaria (πολλὸν πυρετόν) to mortal men.

Natural history never stands by itself in Homer; it lies in the background of the picture, and comes in by way of apt allusion and similitude; it is drawn from an unspoiled land, where wild life was plenteous, and wolf and eagle almost as familiar as grasshopper and nightingale. So the poet's allusions were all within the common experience of his hearers, and sometimes a phrase was enough to indicate them, and sometimes they were painted in with loving elaboration. Blind as he was, there was little Homer did not know; he knew the cuttle-fish and his suckers, and how the wolf on the mountain-side has a narrow tongue and laps like a dog. Here at random are a few of the old familiar similes.

When Sarpedon and Patroclus quarrelled they looked like two angry vultures on the ground, rushing together with flapping outspread wings;

They cuff, they tear, they raise a screaming cry,
The desert echoes and the rocks reply.

In a famous passage (Milton knew it well) the Trojan host is marshalled like the migrating cranes, noisily but in order; it is one of the noblest spectacles in ornithology. Penelope bids her returned but yet unrecognised husband sit a while longer and pass the evening hours; for then she sits alone and grieves—as does the nightingale. Then comes a dreadful story of the wanton handmaidens and how they met their punishment, and beat the air with twinkling feet;

Thus on some tree, hung struggling in the air,
The doves and thrushes flap their wings in air.

A more cheerful picture is that of the old men sitting in the gate,

Chiefs who no more in bloody fights engage,
But wise thro' time and narrative with age;

wisely or no, they chatter all day long—like the cicadas chirruping in the sun. The old men's garrulity, their delight in company, the thin sound, the high treble, of their old voices, their pleasure in the sunshiny day, are all told inimitably, and almost in a word. A very different picture is that of Achilles' Myrmidons on the warpath, a grim, terrific, formidable band, wolf-like, with lolling

tongues, gorged but insatiate; it is the savagest and most terrible picture in all Homer.

Dr. Körner does not write eloquently or poetically; like most classical commentators his job is to look for the prose behind the poetry, but he deals very competently with his theme. There are a few stories which he does not tell. He knows that Odysseus is compared, in a certain passage, to a ram—a dubious comparison; but he does not help us (I cannot recall a single commentator who does) by explaining that this particular ram (κρίλος) is the old wise leader of the flock, *dux ovium*, trained to walk beside the shepherd as Odysseus walked by Agamemnon's side, and to be followed, trusted, pampered, and obeyed.

D. W. T.

Drugs of Addiction

- (1) *A Review of the Effects of Alcohol on Man.* Pp. 300. (London: Victor Gollancz, Ltd., 1931.) 8s. 6d. net.
- (2) *The Alcohol Habit and its Treatment.* By Dr. Walter E. Masters. Pp. xvi + 190. (London: H. K. Lewis and Co., Ltd., 1931.) 6s. net.
- (3) *Dangerous Drugs: the World Fight against Illicit Traffic in Narcotics.* By Arthur Woods. Pp. vii + 123. (New Haven, Conn.: Yale University Press; London: Oxford University Press, 1931.) 9s. net.

THESE three volumes deal with certain aspects of the medical and social problems presented by habit-forming drugs. (1) The first gives an account of the physiological and pathological effects of alcohol upon the human body and mind: it is the work of a number of different authors, and has been edited by a small private committee comprised of persons interested in the drink problem. Its aim appears to be to give a scientific account of the uses of alcohol as a food and a drug, and of the pathological results of alcoholism; chapters are devoted to the mental effects of alcohol, to its relationship to mental disorder, and to its possible racial effects. The book may be recommended as a balanced account of the subject, in which the legitimate uses of alcohol are carefully described and the effects of its abuse are neither minimised nor exaggerated.

(2) The second book is supplementary to the first. In its earlier chapters it covers much the same ground in brief, but the greater part of the book is devoted to the treatment of chronic alcoholism. Dr. Masters considers that a real cure is impossible, the criteria of cure being that the desire for the